



[4910-13-P]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2012-0546; Directorate Identifier 2012-NE-15-AD]**

**RIN 2120-AA64**

**Airworthiness Directives; Pratt & Whitney Division Turbopfan Engines**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** We propose to adopt a new airworthiness directive (AD) for all Pratt & Whitney PW4050, PW4052, PW4056, PW4060, PW4060A, PW4060C, PW4062, PW4062A, PW4152, PW4156, PW4156A, PW4158, PW4160, PW4460, PW4462, and PW4650 turbopfan engines, including models with any dash number suffix. This proposed AD was prompted by 16 reports of damaged or failed 3<sup>rd</sup> stage low-pressure turbine (LPT) duct segments. This proposed AD would require removing from service certain part numbers (P/Ns) of 3<sup>rd</sup> stage LPT duct segments. We are proposing this AD to prevent failure of the 3<sup>rd</sup> stage LPT duct segments, which could lead to LPT rotor damage, uncontained engine failure, and damage to the airplane.

**DATES:** We must receive comments on this proposed AD by [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE Federal Register].

**ADDRESSES:** You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.

- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this proposed AD, contact Pratt & Whitney, 400 Main St., East Hartford, CT 06108; phone: 860-565-8770; fax: 860-565-4503. You may review copies of the referenced service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

**FOR FURTHER INFORMATION CONTACT:** James Gray, Aerospace Engineer, Engine & Propeller Directorate, FAA, 12 New England Executive Park, Burlington, MA 01803; phone: 781-238-7742; fax: 781-238-7199; e-mail: [james.e.gray@faa.gov](mailto:james.e.gray@faa.gov).

### **SUPPLEMENTARY INFORMATION:**

#### **Comments Invited**

We invite you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2012-0546; Directorate Identifier 2012-NE-15-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory,

economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

### **Discussion**

We received 16 reports of damaged or failed 3<sup>rd</sup> stage LPT duct segments that resulted in 5 in-flight shutdowns, two of which were uncontained engine failures. The 3<sup>rd</sup> stage LPT duct segment assembly has seal plates that are attached with rivets. During normal engine operation, vibration may cause these seal plates to loosen or fall off, which allows hot gaspath air to enter the cavity behind the duct. This can cause the 3<sup>rd</sup> stage LPT duct segment to distort, fall into the gaspath, and damage the downstream LPT rotor blades. This condition, if not corrected, could result in failure of the 3<sup>rd</sup> stage LPT duct segments, which could lead to LPT rotor damage, uncontained engine failure, and damage to the airplane.

### **Relevant Service Information**

We reviewed Pratt & Whitney Engine-Duct Segment, Third Stage LPT Assembly Service Bulletin (SB) No. PW4ENG 72-488, Revision 3, dated August 13, 2009. The SB lists the part numbers of parts to be removed and parts to be installed.

### **FAA's Determination**

We are proposing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

### **Proposed AD Requirements**

This proposed AD would require removal from service of 3<sup>rd</sup> stage LPT duct segments P/Ns 50N095; 50N095-001; 50N235; 50N235-001; 50N494-01; 50N494-001; 50N495-01; and 50N495-001, at the next piece-part exposure after the effective date of the proposed AD.

### **Costs of Compliance**

We estimate that this proposed AD would affect 151 engines installed on airplanes of U.S. registry. We estimate that no additional labor costs would be incurred to perform the required work as the work is done when the 3<sup>rd</sup> stage LPT duct segments are at piece-part exposure. The average labor rate is \$85 per work-hour. Required parts would cost about \$44,441 per engine. Based on these figures, we estimate the total cost of the AD to U.S. operators to be \$6,710,591.

### **Authority for this Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

## **Regulatory Findings**

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

## **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

## **The Proposed Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

### **PART 39 - AIRWORTHINESS DIRECTIVES**

- 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

- 2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

**Pratt & Whitney Division:** Docket No. FAA-2012-0546; Directorate Identifier 2012-NE-15-AD.

**(a) Comments Due Date**

We must receive comments by [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE Federal Register].

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to all Pratt & Whitney PW4050, PW4052, PW4056, PW4060, PW4060A, PW4060C, PW4062, PW4062A, PW4152, PW4156, PW4156A, PW4158, PW4160, PW4460, PW4462, and PW4650 turbofan engines, including models with any dash number suffix, with 3<sup>rd</sup> stage LPT duct segments P/N 50N095; 50N095-001; 50N235; 50N235-001; 50N494-01; 50N494-001; 50N495-01; or 50N495-001, installed.

**(d) Unsafe Condition**

This AD was prompted by 16 reports of damaged or failed 3<sup>rd</sup> stage low-pressure turbine (LPT) duct segments. We are issuing this AD to prevent failure of the 3<sup>rd</sup> stage LPT duct segments, which could lead to LPT rotor damage, uncontained engine failure, and damage to the airplane.

**(e) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(f) 3<sup>rd</sup> Stage LPT Duct Segments Removal From Service**

At the next piece-part exposure after the effective date of this AD, remove from service 3<sup>rd</sup> stage LPT duct segments, P/Ns 50N095; 50N095-001; 50N235; 50N235-001; 50N494-01; 50N494-001; 50N495-01; and 50N495-001.

**(g) Installation Prohibition**

After the effective date of this AD, do not install into any engine any 3<sup>rd</sup> stage LPT duct segment, P/N 50N095; 50N095-001; 50N235; 50N235-001; 50N494-01; 50N494-001; 50N495-01; or 50N495-001, that is at piece-part exposure.

**(h) Definition**

For the purpose of this AD, piece-part exposure is when the 3<sup>rd</sup> stage LPT duct segment is removed from the engine and completely disassembled.

**(i) Alternative Methods of Compliance (AMOCs)**

The Manager, Engine Certification Office, may approve AMOCs for this AD. Use the procedures found in 14 CFR 39.19 to make your request.

**(j) Related Information**

(1) Pratt & Whitney Engine-Duct Segment, Third Stage LPT Assembly Service Bulletin (SB) No. PW4ENG 72-488, Revision 3, dated August 13, 2009.

(2) For more information about this AD, contact James Gray, Aerospace Engineer, Engine & Propeller Directorate, FAA, 12 New England Executive Park, Burlington, MA 01803; phone: 781-238-7742; fax: 781-238-7199; e-mail: [james.e.gray@faa.gov](mailto:james.e.gray@faa.gov).

(3) For service information identified in this AD, contact Pratt & Whitney, 400 Main St., East Hartford, CT 06108; phone: 860-565-8770; fax: 860-565-4503. You may review copies of the service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

Issued in Burlington, Massachusetts, on July 2, 2012.

Peter A. White,  
Manager, Engine & Propeller Directorate,  
Aircraft Certification Service.

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